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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/849,344	05/07/2001	Hiroshi Yokoyama	PW 0277195 TK(F)-060-US	1120

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EXAMINER	
FONTAINE, MONICA A	
ART UNIT	**PAPER NUMBER**
1732	

DATE MAILED: 10/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/849,344	YOKOYAMA ET AL.	
	Examiner	Art Unit	
	Monica A Fontaine	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 May 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to the Amendment filed 7 September 2004.

Claim Rejections - 35 USC § 102

It is noted that the following rejection of Claim 5 was first cited in the paper mailed 13 November 2003, but it is repeated here for applicant's convenience.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura et al. (U.S. Patent 5,518,390). Regarding Claim 1, Nakamura et al., hereafter "Nakamura," show that it is known to carry out an injection control method, wherein molten material is injected into a mold by an injection cylinder unit (Abstract), comprising the steps of: setting target velocity data specifying injection operation required for the injection cylinder unit in advance (Column 2, lines 24-26); performing a first shot of an injection operation actually, and recording command data provided to the injection cylinder unit and detecting velocity data indicating the operation performed by the injection cylinder unit during the first shot of injection operation (Column 1, lines 60-63; Column 2, lines 24-28); determining a difference between the detected velocity data and the target velocity data and calculating a correction value based on the difference by

operating the injection cylinder unit for a predetermined number of the injection shots by injection position feedback control (Column 2, lines 24-42); using the calculated correction value and generating command data for a second shot of injection operation (Column 2, lines 34-41, 46-54; Column 3, lines 4-15); and operating the injection cylinder unit by providing to it the command data for the second shot of injection operation (Column 2, lines 46-54; Column 3, lines 4-15) while shifting the control to open loop control of injection velocity by command data generated from the correction value and the previous command data (Column 2, lines 24-42).

Regarding Claim 5, Nakamura shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein in setting the target velocity data, a pattern in terms of position and velocity form specifying injection operation is set in advance by a user, the pattern being converted into time-series position command data in terms of position and time so as to be used for injection position feedback control, as well as the pattern being converted into target velocity in terms of velocity and time (Column 3, lines 60-67; Column 4, lines 1-29).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. The following rejections were first cited in the paper mailed 13 November 2003, but they are repeated here for applicant's convenience.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura, in view of Bulgrin (U.S. Patent 5,997,778).

Regarding Claims 3 and 4, Nakamura shows the process as claimed as discussed in the rejection of Claim 1 above, but does not teach a concept of delay. Bulgrin shows that it is known

to carry out an injection control method wherein (Claim 3) a value of servo delay in the injection cylinder is set in advance (Column 21, lines 21-24), and in calculating the correction value, the difference between the detected velocity data and the target velocity data is calculated in a state that the phase of the detected velocity data is advanced by the servo delay (Column 21, lines 21-31), and (Claim 4) adjustment of the servo delay is made for the entire injection molding shot operation (Column 21, lines 21-48; It is noted that a low-velocity section, a high-velocity section, and a deceleration section would be included in the range over which Bulgrin applies his delay concept.). Bulgrin and Nakamura are combinable because they are concerned with a similar technical field, namely, that of injection molding control methods. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to introduce Bulgrin's concept of delay into Nakamura's control method in order to make the control technique more accurate.

Response to Arguments

Applicant's arguments filed 7 September 2004 have been fully considered but they are not persuasive.

Applicants contend that Nakamura does not show the claimed invention because he does not show shifting the control to open loop control of the injection velocity by command data generated from the correction value and the previous command data. This is not persuasive because in order to calculate the correction value, previous command data is used (Column 2, lines 24-56; It is noted that variables Vs, Vd, and Pd are previous command data values relative to subsequent injection cycles because they are used to calculate Av which is used for open loop

control of subsequent injection cycles). After calculation of the correction value, the control shifts to open loop (Column 2, lines 50-56), using the correction value and, inherently, the previous command data that was used in the calculation of the correction value.

Applicants contend that Nakamura essentially teaches merely feedback control, even though he discloses that injection velocity control becomes open loop control in Column 2, lines 55-56. This is not persuasive because although Nakamura may have periods of feedback adjustment to renew the correction value, he clearly teaches using open loop control to control injection velocity (Column 2, lines 55-56). Applicants do not currently claim exclusive control of injection velocity with open loop control without any periods of renewal of the correction factor.

Conclusion

This is a continuation of applicant's earlier Application No. 09/849344. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A Fontaine whose telephone number is 571-272-1198. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maf
October 8, 2004

MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER